

PAGE 16/24 \* RCVD AT 3/9/2004 4:11:53 PM [Eastern Standard Time] \* SVR:USPTO-EFXRF-1/24 \* DNIS:2731033 \* CSID:2156562498 \* DURATION (mm:ss):07:30

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**Fisher Chemical Catalog**

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**2002/2003**

A freshly updated, complete source for high quality Fisher Chemical products and brand-name reagents.

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Our Catalog

- Iron (Electrolytic Powder)
- Iron (Electrolytic Powder/Certified)
- Iron (Pillars, Deaerated)
- Iron Reference Standard Solution (1000ppm 21% Certified)
- Lithium Standard (Plasma Grade)
- Iron (PlasmaBIO® Assurance Grade Standard/for AA and ICP)
- Iron Standard (Off-Plasma Grade)
- Iron Standard (Plasma Grade)
- Iron Standard (Trace ICP/ICP-MS Grade)

Printout 3

## Catalog

## Iron

## Electrolytic Powder

Certified

Shipping for

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H&amp;M Chemical Company • 1001 Main Street • Iron Station, TN 37084 • Iron (Electrolytic Powder) (Certified) ←

Product Information

Quantity: 500g

Packaging: Amber glass

162-500

Each for \$126.08

Case of 6 EA for \$752.49

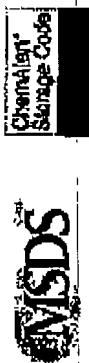
Add to Shopping Cart

Fe AL 46.53.05

UN 3089

DOT Class 4.1: Flammable Solid

CAS Reg. 7439-93-6



## Product Specifications

Actual Lot Analysis is reported on label

Assay [Iron (II)]	>=93%
Insoluble in Dilute H <sub>2</sub> SO <sub>4</sub>	<=0.50%
Nitrogen Compounds (as N)	<=0.003%
Sulfide	To pass test (about 0.02%)

printout 4

# Fisher Chemical LLC

## Iron Filings, Degreased

Catalog

product type

product search

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instructions search

Fisher Chemical Catalog / Material Standards / Iron Filings, Degreased

Quantity: 500g  
Packaging: Amber glass

Each for \$66.12  
Case of 6 EA for \$396.49

Add To Shopping Cart

For MS, Wt. 50.00

UN 3089

DOT Class 4.1; Flammable Solid

OSHA Reg. 1910.106

ChemAlert  
Storage Code:

MSDS

Certificate of Analysis

Product Specifications

Mesh Size

To pass test (about 40 mesh)

# Material Safety Data Sheet

Iron ← (iron filings)

ACC# 11490

## Section 1: Chemical Product and Company Identification

**MSDS Name:** Iron**Catalog Numbers:** S71953, S71953-1, I60 3, I60 500, I60-3, I60-500, I603, I60500, I62 500, I62-500, I62500, S71953-2, S719531, S719532**Synonyms:** Iron Dust; Iron Metal; Iron Powder.**Company Identification:**Fisher Scientific  
1 Reagent Lane  
Fair Lawn, NJ 07410**For information, call:** 201-796-7100**Emergency Number:** 201-796-7100**For CHEMTREC assistance, call:** 800-424-9300**For International CHEMTREC assistance, call:** 703-527-3887

## Section 2: Composition, Information, Ingredients

Product Name	Chemical Name	Concentration	Emergency
7439-89-6	IRON	>97	231-096-4

**Hazard Symbols:** None listed.**Risk Phrases:** None listed.

## Section 3: Hazards Identification

### EMERGENCY OVERVIEW

**Appearance:** black to gray solid. **Warning!** Flammable solid. May cause blood abnormalities. Inhalation of fumes may cause metal-fume fever. May cause lung damage. May cause cardiac disturbances. May cause liver damage. May cause mechanical eye and skin irritation.

**Target Organs:** Liver, respiratory system, cardiovascular system, pancreas.

**Potential Health Effects**

**Eye:** Exposure to particulates or solution may cause conjunctivitis, ulceration, and corneal abnormalities.

**Skin:** May cause skin irritation.

**Ingestion:** May cause gastrointestinal irritation with nausea, vomiting and diarrhea. Acute toxicity may include weakness, shock, cyanosis and acidosis. Delayed symptoms may include liver damage.

**Inhalation:** Inhalation of fumes may cause metal fume fever, which is characterized by flu-like symptoms with metallic taste, fever, chills, cough, weakness, chest pain, muscle pain and increased white blood cell count. May cause lung damage.

**Chronic:** Chronic exposure may lead to liver and lung damage. Repeated exposure may cause pancreatic damage, diabetes, and cardiac abnormalities.

**Section 4 - First Aid Measures**

**Eyes:** Immediately flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. Get medical aid immediately.

**Skin:** Immediately flush skin with plenty of soap and water for at least 15 minutes while removing contaminated clothing and shoes. Get medical aid if irritation develops or persists.

**Ingestion:** If victim is conscious and alert, give 2-4 cupfuls of milk or water. Get medical aid immediately.

**Inhalation:** Remove from exposure to fresh air immediately. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical aid if cough or other symptoms appear.

**Notes to Physician:** Treat symptomatically and supportively.

**Antidote:** The use of Deferoxamine as a chelating agent should be determined only by qualified medical personnel.

**Section 5 - Fire Fighting Measures**

**General Information:** As in any fire, wear a self-contained breathing apparatus in pressure-demand, MSHA/NIOSH (approved or equivalent), and full protective gear. Dusts at sufficient concentrations can form explosive mixtures with air. Combustion generates toxic fumes.

**Extinguishing Media:** Use only graphite powder, soda ash, powdered sodium chloride, or an appropriate metal-fire-extinguishing dry powder.

**Flash Point:** Not applicable.

**Autoignition Temperature:** Not applicable.

**Explosion Limits, Lower:** Not available.

**Upper:** Not available.

**NFPA Rating:** (estimated) Health: ; Flammability: ; Instability:

**Section 6 - Accidental Release Measures**

**General Information:** Use proper personal protective equipment as indicated in Section 8.

**Spills/Leaks:** Sweep up or absorb material, then place into a suitable clean, dry, closed container for disposal. Avoid generating dusty conditions. Remove all sources of ignition.

**Section 7 - Handling and Storage**

**Handling:** Wash thoroughly after handling. Remove contaminated clothing and wash before reuse. Use with adequate ventilation. Minimize dust generation and accumulation. Avoid contact with eyes, skin, and clothing. Keep container tightly closed. Avoid ingestion and inhalation.

**Storage:** Keep from contact with oxidizing materials. Store in a cool, dry, well-ventilated area away from incompatible substances.

**Section 8 - Exposure Controls, Personal Protection**

**Engineering Controls:** Use process enclosure, local exhaust ventilation, or other engineering controls to control airborne levels.

**Exposure Limits**

Chemical Name	ACGIH	NIOSH	OSHA - PEL
IRON	none listed	none listed	none listed

**OSHA Vacated PELs:** IRON: No OSHA Vacated PELs are listed for this chemical.

**Personal Protective Equipment**

**Eyes:** Wear appropriate protective eyeglasses or chemical safety goggles as described by OSHA's eye and face protection regulations in 29 CFR 1910.133 or European Standard EN166.

**Skin:** Wear impervious gloves.

**Clothing:** Wear appropriate protective clothing to prevent skin exposure.

**Respirators:** Follow the OSHA respirator regulations found in 29CFR 1910.134 or European Standard EN 149. Always use a NIOSH or European Standard EN 149 approved respirator when necessary.

## Section 9: Physical and Chemical Properties

**Physical State:** Solid

**Appearance:** black to gray

**Odor:** none reported

**pH:** Not available.

**Vapor Pressure:** 1 mm Hg @ 1787C

**Vapor Density:** Not available.

**Evaporation Rate:** Negligible.

**Viscosity:** Not available.

**Boiling Point:** 4982 deg F

**Freezing/Melting Point:** 2795 deg F

**Decomposition Temperature:** Not available.

**Solubility:** Insoluble in water.

**Specific Gravity/Density:** 7.86 @ 20C

**Molecular Formula:** Fe

**Molecular Weight:** 55.847

## Section 10: Stability and Reactivity

**Chemical Stability:** Decomposes when heated. Oxidizes when exposed to air.

**Conditions to Avoid:** Incompatible materials, moisture, exposure to air, excess heat.

**Incompatibilities with Other Materials:** Acetaldehyde, ammonium peroxodisulfate, chloroformamidinium, chloric acid, ammonium nitrate, halogens, dinitrogen tetroxide, nitryl fluoride, polystyrene, sodium acetylide, potassium dichromate, peroxyformic acid, nitryl fluoride, sulfuric acid, sodium carbide.

**Hazardous Decomposition Products:** Oxides of iron.

**Hazardous Polymerization:** Has not been reported.

## Section 11: Toxicological Information

**RTECS#:**

**CAS# 7439-89-6:** NO4565500

**LD50/LC50:**

**CAS# 7439-89-6:**

Oral, rat: LD50 = 30 gm/kg;

**Carcinogenicity:**

**CAS# 7439-89-6:** Not listed by ACGIH, IARC, NIOSH, NTP, or OSHA.

**Epidemiology:** No information available.

**Teratogenicity:** No information available.





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**SARA Codes**

CAS # 7439-89-6: acute, flammable.

**Section 313**

No chemicals are reportable under Section 313.

**Clean Air Act:**

This material does not contain any hazardous air pollutants. This material does not contain any Class 1 Ozone depleters. This material does not contain any Class 2 Ozone depleters.

**Clean Water Act:**

None of the chemicals in this product are listed as Hazardous Substances under the CWA. None of the chemicals in this product are listed as Priority Pollutants under the CWA. None of the chemicals in this product are listed as Toxic Pollutants under the CWA.

**OSHA:**

None of the chemicals in this product are considered highly hazardous by OSHA.

**STATE**

CAS# 7439-89-6 can be found on the following state right to know lists: California.  
California No Significant Risk Level: None of the chemicals in this product are listed.

**European/International Regulations**

**European Labeling in Accordance with EC Directives**

**Hazard Symbols:**

Not available.

**Risk Phrases:**

**Safety Phrases:**

**WGK (Water Danger/Protection)**

CAS# 7439-89-6: 0

**Canada - DSL/NDSL**

CAS# 7439-89-6 is listed on Canada's DSL List.

**Canada - WHMIS**

This product has a WHMIS classification of B4, D2B.

**Canadian Ingredient Disclosure List**

CAS# 7439-89-6 (listed as Iron salts (soluble)) is listed on the Canadian Ingredient Disclosure List.

**Exposure Limits**

Section 1 - General Information

**MSDS Creation Date:** 12/12/1997

**Revision #1 Date:** 8/02/2000

*The information above is believed to be accurate and represents the best information currently available to us. However, we make no warranty of merchantability or any other warranty, express or implied, with respect to such information, and we assume no liability resulting from its use. Users should make their own investigations to determine the suitability of the information for their particular purposes. In no event shall Fisher be liable for any claims, losses, or damages of any third party or for lost profits or any special, indirect, incidental, consequential or exemplary damages, howsoever arising, even if Fisher has been advised of the possibility of such damages.*